THE EFFECTS OF GENDER AND COGNITIVE FEEDBACK UPON THE ACHIEVEMENT OF INTEGRATIVE AGREEMENTS

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ABSTRACT

Recently due to changes in New Zealand's employment laws there has been increased interest in the study of negotiation behaviour. Studies on the bargaining ability of men and women are inconsistent. To date there is no clear evidence which suggests that men or women are more effective negotiators. Few prior studies have compared the ability of the respective genders to achieve integrative agreements. The present research seeks to re-address this issue. Current research seeks to expand upon what is already known about the relationship between gender and the perception of negotiations by exploring the impact of variations in gender constitution of the dyad upon the achievement of integrative agreements.

This study examines the role of the gender constitution of the dyad and cognitive feedback upon the prevalence of negotiator cognitive bias. Subjects were randomly allocated to one of four experimental conditions, male/male with feedback, female/female with feedback, male/female with feedback and the control group of male/female no feedback. Each dyad completed four novel integrative bargaining tasks, measures of performance and judgment accuracy were taken.

The result indicate that the cognitive feedback manipulation was ineffective in prompting increases in judgment accuracy, contrary to contemporary research. The performance of the dyads did appear to be affected by the gender pairing of the dyads, with the overall performance beginning greatest in the all male paired dyads.

These results are discussed in terms of the presentation and utility of cognitive feedback. The affect of the gender pairing of the dyads is explained using two approaches (a) the perceptions of the integrative bargaining potential of the negotiations from the outset, (b) perceptions of the integrative bargaining potential of a negotiation once negotiations have commenced. Implications for future research are also explored.

PART ONE

RESEARCH OVERVIEW

CHAPTER ONE: INTRODUCTION

OVERVIEW

Negotiation is an essential form of social interaction, which permeates all levels of society. All of us engage in negotiations, as part of our everyday social interactions with co-workers, employers, family members and friends. Deciding which movie to go to with a friend, haggling over the price of a new car, or agreeing on wage increases, are all examples of various contexts of which negotiation is a part. Within a diversity of contexts people negotiate over the distribution of scarce resources. Common sense dictates that wherever resources must be distributed, negotiation should occur. Frequently, both parties endeavour to divide all the available resources, so their own best interests are realised.

Negotiation is essentially a decision-making task where a mutual decision is made concerning the allocation of scarce resources, where no predetermined rules for settlement exist (Bazerman & Carroll, 1987; Pruitt, 1981). It requires opposing parties to engage in an interactive process, through a series of offers and acceptance/rejection responses, if a mutually acceptable settlement is to be reached. The negotiation process provides alternatives to submission to adversaries, reliance upon more powerful associates, arbitration, or other aggressive or more violent tactics, as a means of conflict resolution.

Bargaining and negotiation are tools of conflict resolution in today's society. The capacity to negotiate effectively allows the achievement of social objectives or goals, which mark progress in society. Conversely, suboptimal or unsatisfactory negotiation settlements may facilitate reductions in productivity, decreases in

organizational harmony, weaken trade links or even threaten the survival of a nation (Bazerman & Carroll, 1987). Implications resulting from an understanding of negotiation are broad, and may even impact upon issues such as world peace, political and trade relations.

Part One of the present study reviews the integrative bargaining literature. The first chapter provides an overview of negotiation as an important form of social interaction. Chapter Two, reviews the contemporary negotiation literature, specifically research on negotiator bias, and the effects of cognitive feedback and gender differences on negotiation performance. The final chapter in Part One provides a rationale for the current study, presenting the research questions which this study seeks to address. Part Two outlines the methodology of the present research. This includes; task, subjects, procedure, manipulations and dependent measures. Part Three consists of a summary of the findings of the present research. Finally Part Four provides a discussion of the findings and the limitations of the present research. Implications for future research in this area are discussed.

CHAPER TWO: LITERATURE REVIEW

In recent years various social and economic changes have prompted the poliferation of interest in dispute resolution. The interdisciplinary contribution to the study of negotiation is evidence of a broad interest in social conflict. Research on negotiation behaviour and outcomes can be found within the fields of psychology, economics, industrial relations, organizational behaviour, sociology and law (Thompson, 1990c). Negotiation research has emerged as a major topic of interest for organizational theorists, prompting the development of an understanding of how negotiators perceive the bargaining context.

The goal of negotiation research is to maximise negotiating efficiency (Bazerman, 1986; Raiffa, 1982). As a consequence, empirical and theoretical attention is now being directed towards understanding the dynamics of the negotiation process. The current trend in negotiation research is to view individuals as seekers, monitors and generators of information (Herold & Parsons, 1985) and as interactive information processes, rather than inactive recipients. Recent research seeks to extend the study of negotiation behaviour beyond the investigation of negotiator responses, towards examination of the role played by negotiators in negotiations.

Due to the prevalence of negotiation as a process involved in social judgment, it is tempting to conclude that most negotiators achieve optimal settlements. However the most common finding of several decades of negotiation research, is that people in bargaining or negotiation situations frequently fail to reach settlements of mutual benefit (Pruitt & Rubin, 1986; Thompson, 1990a). This finding contradicts the axioms of normative theories of negotiation behaviour, because negotiators systematically violate key principles of rationality. Deviations from early

prescriptive accounts of how people should behave in competitive situations (Cross, 1965; Harsanyi, 1956, Nash, 1950) have been largely attributed to the existence of faulty negotiator judgment (Bazerman & Carroll, 1987; Thompson & Hastie, 1990).

APPROACHES TO THE STUDY OF NEGOTIATION

In describing the state of dyadic negotiation research three major frameworks for conceptualising dyadic bargaining have been proposed: economic models, structural effects, and personality differences among negotiators. Each is briefly reviewed below. Each of the frameworks and the research perspectives for conceptualising bargaining referred to in this report focus on the most basic unit of conflict, the dyad.

Early perscriptive strategies, focused upon how negotiators should behave in order to reach optimal outcomes. One such approach is the economic model of negotiation behaviour. Economic models are founded upon the assumption that all negotiators are rational utility maximisers. Raiffa (1982) comments

> *"Game theorists.....examine what ultra smart, impeccably rational, super people should do in competitive, interactive situations. They are not interested in the way erring folds like you and me actually behave, but in how we should behave if we were smarter, thought harder, were more consistent, and were all knowing" (p.21)*

Economic models are criticised for their failure to explore central constructs that may allow accurate prediction and description of the negotiation process (Neale & Bazerman, 1985b). They serve to provide an analysis of what negotiators *should* do within the bargaining context, rather than what negotiators actually do (Farber & Katz, 1979; Nash, 1950).

Structural characteristics, specifically third party impasse procedures (Kochan, 1980; Stevens, 1966; Neale, 1984; Neale & Bazerman, 1982) and constituencies (Walton & McKersie, 1965; Lamm & Kogon, 1970; Podell & Knapp, 1969), have also been explored as potential explanations for the failure of negotiators to reach pareto-optimal agreements (optimal settlements for both parties). This approach has been useful, in that it allows a degree of prediction of where a settlement is most likely to occur, based on a set of factors external to the negotiators.

An alternative approach to understanding bargaining focuses on an examination of the role of negotiator personality, including experience, background and expectations. A large volume of research has successfully identified characteristics which inhibit the achievement of favourable agreements (Rubin & Brown, 1975), e.g. risk taking propensity (Harnett, Cummings & Hughes, 1968), low negotiator bargaining aspirations (Thompson, 1990a) and lack of negotiation experience (Thompson, 1990b). This approach has been widely criticised for its inability to establish a theoretical perspective that explains exactly why these individuals are less likely to reach agreement. It has been suggested that it merely serves to provide information on why negotiators may fail to reach rational settlements, and appears unable to provide a more generalized explanation for the relationships (Neale & Bazerman, 1985).

Each of these three different perspectives has made a significant contribution to our understanding of bargaining behaviour, by providing the literature with some limited means of predicting when a settlement is most likely to be made. All identify factors that affect the resolution of a negotiation. However, they fail to directly address the central question of why negotiators fail to reach agreement, despite the existence of a ready available and mutually beneficial outcomes.

Criticisms of these approaches point to the need for a theoretical framework that does more than merely describe the ideal negotiation process, but rather seeks to document how and why negotiators react to the bargaining context in the ways they do.

BEHAVIOURAL DECISION THEORY

Each negotiator has a threshold value that needs to be achieved in order to make participation in negotiations worthwhile (Raiffa, 1982). The point at which the threshold values of the competiting negotiators overlap is defined as a zone of agreement. Behavioural decision theory seeks to answer the following question:

> *If it is rational for a settlement to occur whenever a zone of agreement exists, why do negotiators sometimes fail to reach agreement despite the existence of a zone of agreement?" (Neale & Bazerman, 1985b)*

The behavioural decision approach provides a contrast to earlier prescriptive approaches by identifying the existence of systematic judgmental deficiencies, which depart from negotiator rationality. Raiffa (1982) notes that the development of a strong theoretical construct for negotiation behaviour must be founded upon an accurate understanding of how people actually negotiate.

The behavioural decision theory provides a backdrop against which the dynamics of negotiator behaviour may be explored, by allowing an integration and extension of existing knowledge. It provides a theoretical approach grounded in a framework which prompts the development of a *descriptive* rather than *prescriptive* account of negotiator behaviour. It supports the framework of Walton and McKersie's (1965) distributive and integrative models of negotiation behaviour, which focus on the direct interaction between negotiators, which will be discussed later.

The behavioural decision making perspective is characterised by its perception of each party in the negotiation as an independent decision maker. The behaviours of each party are seen as choices based on judgments made by each negotiator about the negotiation situation. The behaviour of each negotiator is the result of the consideration of available information, an analysis of their opponent's behaviour and the prediction of future events, (Bazerman & Carroll, 1987). Negotiators' perceptions of the negotiation situation whether of the opponent's interests or of the success of the negotiation, frequently differ considerably from those predicted by more objective economic analysis.

Behavioural decision theory literature has proposed a number of systematic deficiencies which impede rational decision making. It has been responsible for the identification of a number of systematic cognitive limitations that affect the ability of the negotiator to adopt prescriptive negotiation strategies (Bazerman & Carroll, 1987; Bazerman & Neale, 1983; Bazerman, Magliozzi & Neale, 1985; Bazerman & Neale, 1985, Thompson & Hastie, 1990, Neale & Bazerman, 1985b). Behavioural decision theory provides a theoretical anchor for the present research, by undertaking further exploration of the prevalence of cognitive bias in negotiator behaviour.

RATIONALITY

Early negotiation research assumed rationality of both process and outcome within the bargaining situation. Research data indicate exactly the converse, namely that despite the existence of a positive zone of agreement, negotiators continue to behave in ways inconsistent with normative models of negotiation behaviour (Bazerman & Carroll, 1987; Neale & Bazerman, 1985b). If negotiators were rational, where a positive zone of agreement exists, settlement would always occur. Conversely, in the absence of a positive zone of agreement, resolution would be impossible

(Bazerman & Neale, 1985). Interestingly, often despite the existence of a zone of agreement, opposing parties may not reach a settlement (Raiffa, 1982). This has lead to wide criticism of the rationality assumption upon which prescriptive strategies of negotiation behaviour are founded (Bazerman, 1983).

This argument is strongly supported by empirical research which illustrates that negotiators deviate from decisions maximising utility, in often systematic and predictable ways (Hogarth, 1981; Kahneman, Slovic & Tversky, 1982). Both laboratory and case/field studies have consistently found that negotiators frequently fail to reach integrative solutions (Bazerman & Neale, 1983; Pruitt & Rubin, 1986; Raiffa, 1982). Instead they settle with suboptimal agreements, often reducing the value of the outcome for both parties (Bazerman, Magliozzi & Neale, 1985, Thompson & Hastie, 1990). Research has consistently illustrated that a large amount of sub-optimality exists within the negotiation context, as a consequence of negotiators' non-rational cognitions.

Typically negotiator's do not carry out a full rational assessments of the negotiation situation, and frequently distort or ignore information presented to them (Thompson, 1990b), in favour of the persistence of their own preconceived notions of opponent interests and priorities. A large body of evidence exists which suggests that people frequently fail to recognise the integrative potential present in negotiation situations (Bazerman & Neale, 1983; Thomson & Hastie, 1990a, 1990b; Carroll, Bazerman & Maury, 1988; Pruitt & Rubin, 1986; Raiffa, 1982). As a consequence, negotiators often settle upon outcomes which are less than optimal, for both parties (Thompson & Hastie, 1990). Inconsistencies in the cognitive process of negotiators serve to negate the popular assumption that negotiators are utility maximizers, and draw attention to the existence of limitations upon negotiator judgment.

INTEGRATIVE AGREEMENTS

Bazerman & Carroll (1987) define negotiation as "a process by which two or more interdependent parties who do not have identical preferences across decision alternatives, make joint decisions" (pg. 248). Where parties have a complete conflict of ideas, opinions or beliefs the negotiation is termed *distributive* (Raiffa, 1982; Walton & McKersie, 1965). A negotiation that is variable sum in nature, with the potential for joint gains to be made is known as *integrative* (Follett, 1940; Raiffa, 1982; Walton & McKersie, 1965). Integrative agreements occur when the interests of both parties are neither completely opposed nor completely compatible, and where the gains of one party will not be directly reflected in the losses of the opposing party.

A situation is said to have integrative potential if multiple issues are involved and if the competing parties have different preferences among these issues. For example, imagine that a couple are deciding where to spend their annual holiday. The husband prefers a cabin in the mountains, while the wife has a preference for a luxury hotel on the seashore. The couple may be said to have reached an integrative agreement if they decide to spend their vacation in a luxury hotel in the mountains (Pruitt, 1981). Integrative agreements are preferable over compromises because they allow negotiators to reach agreement in situations that otherwise have the potential to result in stalemates. In addition hey are more stable over time and they foster more positive relationships between opposing parties (Pruitt & Rubin, 1986).

The achievement of integrative agreements is founded upon the capacity of the negotiating parties to logroll. Logrolling requires each party to trade off concessions on their least important issues in return for gained concessions upon issues of primary importance to them. Froman & Cohen (1970), compared the capacity of logroll to exploit the potential for joint profit in a standard multiple-issue

bargaining situation, with that of compromise. Not unexpectedly, their results were consistent with the existing literature, i.e. that of the two bargaining processes, logrolling produced the most profitable settlements. This suggests that the ability to logroll issues is a key ingredient in the achievement of an integrative agreement, particularly in complex multi-issue tasks such as contract negotiation in labour relations.

Work by Pruitt (1981, 1983; Pruitt & Lewis, 1975) brought integrative bargaining to the fore of negotiation research. Pruitt (1983) discovered two important antecedents to the achievement of integrative agreements: high aspirations (negotiator's drive to satisfy their own demands) and problem-solving orientation (ability of a negotiator to recognise that each party has a different set of priorities). The presence of these factors increases the likelihood that, if integrative potential exists, it will be realised.

Thompson (1990a) explored the impact of experience with integrative tasks on the ability of negotiators to reach integrative settlements. Findings suggest, that negotiators are able to generalize the skills required to make mutually beneficial agreements, to a further novel task. Thompson concluded, that experience with tasks with integrative potential substantially increases negotiator performance, although surprisingly, the ability to identify the existence of compatible interests was not affected by experience.

Thompson extended her earlier research by comparing the respective ability of both naive and experienced negotiators to reach integrative solutions (Thompson, 1990b). Intuitively it is tempting to assume that expert negotiators will out-perform novices. The results of Thompson's research fail to support this assertion; in fact they suggest that minimal experience is necessary to achieve a highly integrative solution.

THE NEGOTIATOR AS AN INTERACTIVE PARTICIPANT

Central to the understanding and eventual prediction of negotiator behaviour, is examination of the role played by the negotiator. Contemporary negotiation research views the negotiator as an active participant in the negotiation process, rather than as a passive recipient. The negotiation context is mediated by judgments made by the negotiators during the course of the exchange. Pinkley & Northcraft (1989) (cited in Neale & Northcraft, 1991) note that the negotiator's interpretation of the dispute significantly impacts upon the content of the agreement. The negotiator's perception of the negotiation context is therefore a critical determinant, of negotiator behaviour.

The basic psychological principle, that behaviour is a function of the interaction of the individual with the environment, may be applied to the decision making context. The unique characteristics of the negotiator interact with those of the situation to produce different decision making outcomes. Each individual brings to the negotiation a distinct set of experiences, backgrounds and expectations that affect their behaviour and subsequent performance (Neale & Bazerman, 1985). Each negotiator has a unique cognitive structure which regulates their ability to process information and hence, their capacity to negotiate (Bazerman & Carroll, 1987). An individual's potential to be a successful negotiator is a function of the integration of these two factors, the individual's cognitive processes and their experience with negotiation.

FIXED PIE PERCEPTION

Carroll, Bazerman & Maury (1988), assert that negotiators have a limited cognitive capacity in these situations. Researchers have consistently cited faulty judgment as responsible for suboptimal decision making by negotiators (Bazerman & Carroll, 1987; Thompson & Hastie, 1990). Behavioural decision theory has identified a

number of systematic biases in negotiators' cognitions that cause irrational negotiator judgments. Five unique biases have been identified which create cognitive limitations: (1) the impact of the negotiator's frame (Bazerman, Magliozzi & Neale, 1985), (2) the non-rational escalation of conflict (Bazerman, 1983), (3) negotiator overconfidence (Bazerman & Neale, 1982), (4) the winner's curse (Samuelson & Bazerman, 1985), and (5) the mythical fixed pie (Bazerman, 1983).

Due to its pervasiveness and its importance to the achievement of integrative agreements, the fixed-pie myth has been the focus of a large body of research (Thompson & Hastie, 1990). The existence of the fixed-pie myth is strongly supported by the negotiation literature as a key explanation for sub-optimal negotiation settlements. The fixed pie expectation that one's own interests are directly opposed to one's opponent's interests represents a serious judgment error, limiting the negotiators capacity to realize the potential for mutually beneficial trades. Those who perceive negotiations with a fixed-pie perception are less likely to reach integrative agreements than those who do not possess this bias (Thompson & Hastie, 1990).

Contemporary research has established the existence of a relationship between judgment accuracy and negotiation performance (Carroll, Bazerman, & Maury, 1988; Thompson & Hastie, 1990; Thompson, 1990a, 1990b; Thompson, 1991). Earlier researchers mainly inferred the existence of judgment bias, and its subsequent effect on negotiation outcomes. Research by Thompson & Hastie (1990) was the first work to measure quantitatively the existence of errors in negotiator judgment. Thompson & Hastie found that most naive negotiators adopt a "fixed pie" perception when entering negotiations, evaluating the relative importance to their opponent of the to-be-negotiated issues as the same as for the self. Evidence suggests that these biases may also be prevalent in expert as well as a naive subject populations (Neale & Northcraft, 1986).

Given that negotiators seldom engage in one shot negotiations, this raises the question of the role of experience in the development of fixed-pie perceptions. Thompson (1990a) found support for her hypothesis, that experience in distributive negotiations reinforces negotiator's fixed-pie perceptions. Experience with bargaining tasks with integrative potential, allows negotiators to break the fixed-pie assumption and to attain pareto-optimal settlements (Mc Alister, Bazerman & Fader, 1986, Thompson, 1990a). Bazerman et al (1985) found, using a novel integrative bargaining task that required both cooperation (perception of compatible interests) and competition (direct conflict of interests), that it was the competitive element that becomes immediately salient, facilitating the adoption of a win-lose orientation by negotiators.

Examination of factors which mediate the prevalence of negotiator judgmental biases represents the next critical step in the development of the conflict literature. To date, the existing judgment accuracy literature has been concerned with the relationship between judgment accuracy and performance. (Thompson & Hastie, 1990; Thompson & DeHarpport, 1992, Thompson, 1990). It is now widely accepted that judgment accuracy is a key ingredient in the resolution of conflict. However a theory of negotiator judgment must do more that merely demonstrate the existence of judgmental errors. Neale & Bazerman (1985b), note that resistance to negotiator cognitive bias lies in the awareness of its prevalence, and the factors which mediate its effect.

INDIVIDUAL DIFFERENCES

Negotiation is clearly an interactive behaviour. Casual observation of daily exchanges between individuals is all that is necessary to recognise that personalities and characteristics of the conflicting parties affect the resolution process. Although there are infinite examples from everyday life that individual

traits and characteristics do affect the role played by an individual in a negotiation task, this assumption is not supported unequivocally by the empirical literature.

Research on the role of the individual personality and its impact upon negotiation performance, began in the late 1950s, and constitutes one of the most controversial areas of research in this field. Early research on individual differences was preoccupied with the impact of background, demographics and personality factors. Rubin and Brown (1975) reviewed over 200 quantitative studies of individual differences that might be responsible for differences in bargaining performance, and were unable to firmly establish any systematic relationships. Other individual variables explored have included: risk-taking propensity, perceived locus of control, strength of social motives and levels of self-concept (Lewicki & Litterer, 1985).

As a direct consequence, individual differences research constitutes one of the most controversial areas in the existing negotiation literature. Several explanations have been tendered in an effort to explain the maze of contradictory and inconclusive findings in the existing individual differences literature. These are outlined by Lewicki & Litterer (1985) in their book *Negotiation* . One potential explanation for such inconsistent findings suggests that the impact of "structural" variables may supersede the effects of individual differences (Lewicki & Litterer, 1985). In essence the presence of factors external to the individual may serve to mask the effect of individual differences on negotiation behaviour. For example experience within the negotiation environment, negotiator power, constituency pressure, and opponent behaviour may overshadow whatever initial predispositions individuals may hold.

Additionally, relationships between structural variables may obscure or inhibit the emergence of individual differences, thus reducing their impact. This is illustrated in early negotiation research which frequently employed a simple, two-choice,

conflict game, the Prisoner's Dilemma, as the simulated conflict scenario. The Prisoner's Dilemma consists of a simple decision-making paradigm, requiring subjects to make repeated choices between competitive and cooperative decision alternatives, while isolated from their opponent both verbally and visually. This is not at all representative of the complex interactive environment, characteristic of most negotiations.

Another explanation proposed to account for the current state of differential research in this field includes criticism of early research methodologies. Due to the subtle and elusive nature of these variables, it is possible that early research instruments, measurements and reporting styles were too simple to detect individual differences which may exist. The designs of many studies attempting to explore individual differences, are widely criticised for their unsystematic, disorganised methods and unscientific conduct. As a consequence direct comparisons between different research designs, methods and bargaining paradigms may be responsible for the emergence of inconclusive findings.

GENDER DIFFERENCES

The present research is primarily concerned with one specific individual attribute, gender. There have been many studies conducted on the effects of gender differences in negotiation. Rubin & Brown, in their book *The Social Psychology of Bargaining and Negotiation (1975),* reviewed the then existing empirical literature on background, demographic, and personality factors, which have been hypothesized to effect to negotiation behaviour. From their review of over 100 studies on gender differences and their effects on bargaining behaviour, they found, 30 studies revealed no gender differences, 20 studies reported males as more cooperative than females, while many other studies concluded that females exhibited more

cooperative traits when negotiating when compared to males. Such inconclusive findings are representative of much of the research on individual differences.

Lewicki & Litterer (1985) comment

> *"From what is known now, it does not appear that there is any single personality type or characteristic that is directly and clearly linked to success in negotiation" (p. 276).*

It is proposed that such a conclusion is premature. Due to the dynamic nature of negotiation, it is plausible to assume that some kind of relationship exists between personality type and characteristics, and the behaviour of individuals. Casual observation of everyday activities and interactions are evidence that our personality and interactive style affect the way we deal with others. Therefore it is reasonable to assume, that characteristics of the negotiator will influence their behaviour and subsequent outcomes in a confrontational situation. Such an argument has intuitive appeal.

Evidence exists to suggest that men and women perceive negotiations differently (Pinkley, 1990; Druckman & Zechmeister, 1973). It appears that men are primarily interested in winning and maximising outcomes, and women are concerned with maintenance of the negotiation relationship (Kimmel, Pruitt, Magenau, Konar-Goldband & Carnevale, 1980). Pinkley (1990) found that women were likely to view a negotiation in terms of relationships while men were likely to be concerned with the exchange of resources. An unpublished study by Neale & Northcraft suggests that the negotiators propensity to negotiate is significantly correlated with gender, thus affecting the conceptualisation of the integrative potential of a situation. The suggestion that men and women perceive negotiation in different ways has implications for understanding why negotiator's judgments commonly deviate from

rationality. Examination of the prevalence of biases among men and women allows researchers to explore factors which maybe responsible for negotiators' lack of rationality.

COGNITIVE FEEDBACK

The notion that if an individual is provided with feedback, performance will be increased has been a long standing psychological principle. Behavioural decision making theory (Einhorn & Hogarth, 1978; Hogarth, 1981) accounts for suboptimal decisions in terms of an absence of feedback from the negotiation environment. A considerable amount of empirical research has examined the impact of feedback upon individuals' motivation and learning (Adams, 1968; Ammonds, 1956). It is also widely held that feedback affects negotiator performance by allowing negotiators to understand and improve upon prior performance, by reducing commitment to incorrect strategies and through the development of judgment accuracy (Hogarth, 1981).

In dyadic negotiations, each negotiating party is required to make an assessment of their opponent's interests and priorities in order to formulate a 'plan of attack'. An accurate appraisal of the opponent's interests is critical to the development of integrative agreements (Thompson & Hastie, 1990). Negotiator's interests cannot be directly observed, and it is seldom that negotiating parties reveal to their opponents where their interests lie. Negotiations are often single episodes, with little information exchange between parties, and this makes it difficult to learn about the opponent's interests. Negotiators are forced to guess or infer on the basis of patterns of reciprocity and concession, as the negotiation proceeds, the true interests of their opponent.

Due to the interactive nature of negotiation, negotiators are supplied with an almost constant stream of feedback, which they can utilize to re-evaluate their behaviour and decisions (Hammond, McClelland & Mumpower, 1980). Negotiators may use this feedback to revise their judgments of their opponents and apply what they have learned to subsequent negotiations (Thompson & DeHarpport, 1992). Einhorn & Hogarth (1978) developed a model to represent the self-correcting function of feedback. The judgment-action model, proposes that an individual's initial judgment and assessment of the situation determine their subsequent actions and behaviour, which affects the outcome achieved. In short the interaction of judgments, actions and the environment produces outcomes (Thompson et al, 1992).

From this model, Balzer, Dohery & O'Connor (1989) distinguished two types of feedback: outcome feedback (knowledge of results) and cognitive feedback (information about relations between cues in the environment). It is widely accepted that outcome feedback is generally ineffective for increasing judgment accuracy and performance in complex uncertain environments (Hoffman, Earle, & Slovic, 1981; Balzer et al 1989, Brehmer, 1980; Einhorn & Hogarth, 1981). Some have gone so far as to assert that outcome feedback has not only a negative effect on negotiation outcomes, but may actually impede performance (Hammond, Summers & Deane, 1973). Research indicates that in both laboratory and field settings, cognitive feedback improves performance on multiple cue probability learning tasks (Balke, Hammond, & Meyer, 1973; Hammond & Adelman, 1976, Hammond & Boyle, 1971; Steinmann, 1974).

Balzer, Doherty & O'Connor (1989) in their review of the empirical literature comparing cognitive and outcome feedback, conclude that in general cognitive feedback does improve performance on judgment tasks. Cognitive feedback refers to information about relations (e.g. learn about the underlying interests of opposing

party), as opposed to information about outcomes (e.g. opponents net gains from settlements) (Balzer, Doherty & O'Connor, 1989). Balke, Hammond & Meyer (1973) report favourable reactions to the presence of cognitive feedback, based upon subjective reports by management and union negotiators. Tucker (1982, cited in Blazer et al 1989) reports negotiators found that cognitive feedback provided insight to the negotiation process. The success of cognitive feedback has been attributed to its ability to facilitate increased understanding of both the negotiator's own interests and that of their opponents.

Balzer et al (1989) conceptualizes cognitive feedback as three distinct components: information about the task, information about the cognitive system and information about the relation between the cognitive and the task systems (Thompson et al, 1992). Task information refers to the relationship between the cues and the criterion. Cognitive information refers to the relations perceived by the individual. Functional validity information describes the relations between the criterion and individual judgment. When applied to a negotiation paradigm this translates respectively to a relation between opponent's interests and their behaviour, relations between a negotiator's judgment and behaviour of the opponent, and the relation between the negotiator's judgment and the true interest of the opponent (Thompson, et al 1992). Existing research suggests that task information is a central component responsible for the performance enhancing effect of cognitive feedback.

This introduction explores deviations from rational decision making, frequentl made by negotiators. It adopts behavioural decision theory as the main theoretica framework for conceptualizing dyadic bargaining in the present research, and usin this framework seeks to explore the achievement of integrative agreements. Th investigation of the effects of gender differences upon negotiation behaviour an outcomes constitutes one of the most controversial areas in the negotiation literature However, Lewicki & Litterer (1985) and Rubin & Brown (1975) concluded that littl

support had been found for the main effect of gender differences in negotiatio performance. Yet evidence does exist to suggest that men and women perceiv negotiations differently (Pinkley, 1990). In addition , using Balzer et al (1989 feedback models, outcome feedback and cognitive feedback are distinguished. Thi enables the researcher to highlight the importance of the presence of cognitiv feedback in enhancing negotiation performance, due to its ability to communicate th relationships between the interests of the two competing negotiators.

CHAPTER THREE: RATIONALE

RESEARCH QUESTIONS

From the review of the literature it is easy to see that negotiation is an important tool for conflict resolution in many areas of society. A comprehensive understanding of the negotiation process is necessary to facilitate the achievement of optimal negotiator response.

The present research follows the lead taken by Neale & Bazerman (1991) in concentrating upon judgments made by parties and about the negotiation situation and their opponents, and its effect upon their subsequent behaviour. Viewing negotiation as a decision making process provides a key to understanding it. The objective in examining negotiation as a decision making behaviour allows an evaluation of ways in which negotiators deviate from rational thought and how this affects the achievement of mutually beneficial agreements.

It is widely held, by writers in this field, that most negotiations contain the potential for the achievement of an integrative settlement (Pruitt & Rubin, 1986; Raiffa, 1982). Therefore, it is necessary to understand how and why negotiators define the negotiation context in the way they do. Smith (1987) argues that although the negotiation context affects bargaining it must not be forgotten that it is interpreted through 'personal filters'. In essence people do affect bargaining. *Of the scant number of clear relationships reported, those with the most potential to explain negotiator behaviour, include variables such as cognitive reasoning ability and individual performance, as well as negotiator gender and perceptions of negotiation (reference). Thompson cautions that these assumptions are founded on a small number of studies and hence require further examination, before more general conclusions can be drawn.

A comprehensive description of negotiation should include information on the role of the negotiator (reference). Analysis and eventual understanding of the effect of individual differences in negotiator cognitions is important in the establishment of decision making optimality. Although progress has been made in the last two decades of negotiation research, a considerable knowledge gap exists concerning whether or not negotiation behaviour is affected by gender specific cognitive processes. The current research aims to address this shortfall, by the examination of the degree to which the gender constitution of the dyad affects the interpretation of the integrative potential of the negotiation. It also explores the question of whether gender is predictive of specific bargaining strategy.

Little research to date has explored the factors which mediate the performance enhancing effects of cognitive feedback. The literature has moved no further than to delineate the utility of the resource, at the expense of ignoring the role of the individual in the process. This shift in focus is evident in the current research and its emphasis on the role of feedback as more than a valuable organizational resource, but as an important individual resource (Ashford & Cummings, 1983). In essence, the present experiment was designed to test the generalizability of the effectiveness of cognitive feedback on multi-issue, integrative bargaining tasks.

In the experiment, negotiators would be provided with a copy of their opponent's payoff schedule, in a procedure similar to that used by Thompson & Hastie (1992), who provided subjects with an opportunity to examine the underlying interests of their opponents. The effectiveness of feedback on judgment accuracy and performance would be compared with control groups who received no feedback. The gender constitution of the dyad was also to be manipulated, by having female, male or mixed gender pairs. This allowed the examination of the effects of gender upon the prevalence of significant cognitive bias.

The following research questions were posed:

1. Will the gender constitution of the dyad affect the negotiation outcome in terms of performance on logroll and compatible issues ?

2. Will the gender constitution of the dyad affect a negotiator's judgment accuracy on logroll and compatible issues ?

3. Will cognitive feedback affect the negotiation outcome in terms of performance on logroll and compatible issues ?

4. Will cognitive feedback affect the negotiation outcome in terms of judgment accuracy on logroll and compatible issues ?

PART TWO

METHOD

SUBJECTS

90 subjects were drawn randomly from undergraduate psychology subject pools at the University of Canterbury. These subjects were contacted by phone by the experimenter and asked to participate in the experiment. Of those approached, 80 subjects agreed to participate in experimentation, in return for a cash incentive. Each subject's name was entered in a lottery for a cash prize of $100, to be drawn once data collection had been completed. This draw was not influenced by the performance of the subjects on the experimental tasks. The experimental sample had equal numbers of male and female subjects.

NEGOTIATION TASKS

Following the signing of consent forms, subjects were told they would engage in several negotiations with another subject. They were not told exactly how many negotiation tasks they would be required to complete (Thompson et al 1992). This was done to avoid end-game effects, which occur when subjects anticipate the end of experimentation, and, as a direct consequence, change their behaviour e.g. take less care or settle for increasingly suboptimal agreements. Subjects were presented with a payoff matrix for each negotiation task. Four different negotiation tasks were used to avoid subjects simply agreeing to the same terms as in prior negotiation rounds (see Appendix 1). For example, if the same task was used for each round of negotiations, negotiators would simply agree to the same terms as in earlier tasks, eliminating the need for negotiators to bargain.

The four tasks differed in their content, setting and the issues to be negotiated in each case. For example, one task involved the negotiation of terms of employment for a government employee. The five issues to be negotiated in this task were; salary, vacation, annual rise, start date and medical coverage. The other three tasks involved, purchasing a car, settlement of a tenancy agreement and planning a

holiday. The number of points earned by the negotiator for the settlement of each issue was represented in the payoff matrices by a bold figure in brackets. Negotiators were unaware of the points earned by their opponent for the settlement of each issue.

All negotiation tasks had the same format. Each task consisted of five to-be-negotiated issues: two issues were distributive in nature; two issues contained the potential to be logrolled; and one issue was included upon which parties had compatible interests. It should be recalled that distributive issues, are purely fixed sum, where gains for one party result in equal losses for their opponent. Logroll issues are variable-sum issues, and occur when gains for one party do not represent equal and opposing losses for the other. Compatible issues are characterised as those issues for which both parties have identical preferences, where a gain for one party represents an equal gain for the opposing party (Thompson et al, 1992).

TABLE 1: Payoff Matrices for Negotiator A, Task 1

SALARY (l)	VAC (d)	RISE (d)	DATE (c)	MED (l)
$24 (**660**)	3 Wks (**240**)	15 % (**360**)	May 5 (**300**)	100% (**100**)
$23 (**495**)	2.5 Wks (**180**)	12 % (**270**)	May 10 (**225**)	80% (**75**)
$22 (**330**)	2 Wks (**120**)	9 % (**180**)	May 13 (**150**)	60% (**50**)
$21 (**165**)	1.5 Wks (**60**)	6 % (**90**)	May 15 (**75**)	40% (**25**)
$20 (**0**)	1 Wk (**0**)	3% (**0**)	May 27 (**0**)	20% (**0**)

TABLE 2: Payoff Matrices for Negotiator B, Task 1

SALARY (l)	VAC (d)	RISE (d)	DATE (c)	MED (l)
$24 (**0**)	3 Wks (**0**)	15% (**0**)	May 5 (**300**)	100% (**0**)
$23 (**25**)	2.5 Wks (**60**)	12% (**90**)	May 10 (**225**)	80% (**165**)
$22 (**50**)	2 Wks (**120**)	9% (**180**)	May 13 (**150**)	60% (**330**)
$21 (**75**)	1.5 Wks (**180**)	6% (**270**)	May 15 (**75**)	40% (**495**)
$20 (**100**)	1 Wk (**240**)	3% (**360**)	May 27 (**0**)	20% (**660**)

Table 1 demonstrates examples of the pay-off matrices used, in this case for the five issue in Task 1. In this task, the logroll issues were salary and medical, the distributive issues, vacation and annual raise, and the compatible issue start date (see Appendix 1).

PROCEDURE

Upon arrival at the laboratory, subjects were required a sign a consent form. Subjects were randomly assigned to either buyer or seller roles and then paired with another subject, for a total of 80 dyads. 10 dyads were constructed for each of the following conditions:

TABLE 3. Summary Table of Experimental Conditions

Condition	Dyad Constitution	Feedback
1	male/male	yes
2	female/female	yes
3	male/female	yes
4 control	male/female	no

Subjects were randomly assigned to one of three experimental conditions (male/male dyad with feedback, female/female dyad with feedback, male/female dyad with feedback) and because it was thought that the provision of feedback might have unintentionally affected behaviour, and to one control condition consisting of a male/female dyad without feedback. Subjects remained in the same condition, and negotiated with the same partner for the entire duration of the experiment.

Subjects were given a brief quiz, to ensure that they understood the structure of the payoff matrices. The quiz required subjects to indicate, based upon the information provided in the practice payoff matrices, which issue was of most importance (in terms of points) to them, which issue was of least importance, and what their ultimate settlement would be (the settlement that would give them the most points). Those who answered incorrectly had the correct interpretation explained to them until it they understood the structure of the matrices clearly. Subjects frequently misunderstood the nature of the matrices, with approximately 45% requiring additional explanation.

Subjects engaged in four negotiation tasks, with ten minutes being allowed for the completion of each task. Subjects negotiated face to face with no restrictions on communication, except that they were instructed not to physically exchange their payoff schedules (Pruitt & Lewis, 1975). Subjects were instructed to earn as many points as they could for themselves in each negotiation. In addition, they were informed that failure to reach an agreement within the time allotted to each task, would result in both parties earning zero points.

Following each negotiation round, but before the feedback manipulation, a judgment accuracy measure was taken. Subjects were provided with a blank payoff schedule similar to the one given in the experiment, and required to fill the blanks

with numbers to indicate what they thought their opponent's payoff schedule looked like. Subjects were allowed to refer to their own payoff schedule, in order to make a judgment about their opponent's matrices.

FEEDBACK MANIPULATION

All conditions, excluding the control group, were provided with cognitive feedback. Subjects were provided with a a copy of their opponent's matrices and reproduction of their matrices on the same page. This allowed subjects to simultaneously consider the interests of the parties. They were told, "We thought you would like to know a little about the other persons interests in the negotiation you have just completed. Here is a copy of the other person's payoff schedule for the negotiation you have just completed" (Thompson et al 1992).

DEPENDENT MEASURES

The basic unit used for statistical analysis was the dyad. Each dyad was assigned a score for their overall performance, as well as two performance scores and two judgment accuracy scores. This meant that for each dyad five scores were obtained. These were: overall performance, performance on logroll issues, performance on compatible issues, judgment accuracy on logroll issues and judgment accuracy on compatible issues. Scores on the two distributive issues were not measured, because they sum to the same amount in each task, independent of negotiator performance.

This meant that the performance of each dyad was calculated using three measures of joint performance: the overall performance of the dyad, the negotiator's ability to logroll, and the negotiator's capacity to identify the existence of compatible issues. Overall performance was calculated simply by summing the settlement points

earned by both negotiators for all the issues in the task. Performance measures for logroll issues were calculated by summing the settlement points earned by both negotiators on the two logroll issues for that task. Performance measures for the compatible issues were calculated in a similar fashion, i.e. by summing the settlement points earned by both negotiators on the compatible issue, for that task. Judgment accuracy scores were taken to indicate how well each individual negotiator was able to identify their opponent's interests, on the logroll issues and the compatible issues. Measures of judgment accuracy were computed for the logroll issues by calculating the difference between the negotiator's estimates of the opponent's interests and the true value of the logrolling issues to the opponent, for each task. The absolute differences were summed across each of the settlement alternatives for the two logroll issues (e.g. salary and medical, see Appendix 1) to calculated judgment error. Error scores could range from 0-2800. Negotiators who believed their interests were the same as their opponent's had an error score of 2800 (illustrative of the fixed pie myth). Those who believed their interests were different to those of their opponent on the two logroll issues, will have a perfectly accurate judgment score of 0. Intermediate values between these two poles also exist.

For example, if a negotiator assumes the fixed pie myth, i.e. they expect their opponent's interests to be the same as theirs, specifically their highest priority is salary and the lowest medical. The figures in bold are the opponent's *actual* values on the logroll issues (see Table 4), while the others are the negotiator's *guesses* at their opponent's values (see Table 5). The negotiator's judgment accuracy score would be calculated using a formula similar to that used in earlier research by Thompson & Hastie (1990). For example:

Absolute [(**660**-100) + (**495**-75) + (**330**-50) + (**165**-25) + (**100**-660)
+ (75-**495**)+ (50-**330**) + (25-**165**)] = 2800

TABLE 4: Actual Payoff Matrices for Opponent

SALARY (l)	VAC	RISE	DATE	MED (l)
$24 (**660**)	3 Wks (**240**)	15 % (**360**)	May 5 (**300**)	100% (**100**)
$23 (**495**)	2.5 Wks (**180**)	12 % (**270**)	May 10 (**225**)	80% (**75**)
$22 (**330**)	2 Wks (**120**)	9 % (**180**)	May 13 (**150**)	60% (**50**)
$21 (**165**)	1.5 Wks (**60**)	6 % (**90**)	May 15 (**75**)	40% (**25**)
$20 (**0**)	1 Wk (**0**)	3% (**0**)	May 27 (**0**)	20% (**0**)

TABLE 5: Negotiator's Guess at Opponents Payoff Matrices

SALARY (l)	VAC	RISE	DATE	MED (l)
$24 (**100**)	3 Wks (**240**)	15 % (**360**)	May 5 (**0**)	100% (**660**)
$23 (**75**)	2.5 Wks (**180**)	12 % (**270**)	May 10 (**75**)	80% (**495**)
$22 (**50**)	2 Wks (**120**)	9 % (**180**)	May 13 (**150**)	60% (**330**)
$21 (**25**)	1.5 Wks (**60**)	6 % (**90**)	May 15 (**225**)	40% (**165**)
$20 (**0**)	1 Wk (**0**)	3% (**0**)	May 27 (**300**)	20% (**0**)

Judgment accuracy on the compatible issue for each task was calculated using the following guidelines: if the negotiator believed their opponent's interests in the compatible issue was the same as theirs they were assigned 1 (perfect accuracy), if they thought their opponent's interests were opposed to their own a 0 (complete inaccuracy) was assigned, or a 0.5 if the negotiator was indifferent to the alternatives for each issue.

PART THREE

RESULTS

RESULTS OF THE PRESENT STUDY

This chapter outlines the effects upon negotiator behaviour of the two independent measures, feedback and gender pairing and reviews the effects of these measures upon the performance and judgment accuracy of each dyad.

OVERALL PERFORMANCE

In order to establish which experimental conditions produced the best negotiation performance, a measure of overall performance was taken across the four negotiation tasks. This measure sums the points earned by each individual negotiator for each task and adds the scores for both negotiators together, producing a measure of overall dyadic performance, for each negotiation task. Scores could range from (0-1660) . All dyads reached agreement.

TABLE 6: Overall Performance

	TASK				
CONDITION	1	2	3	4	
Mixed no feedback (n=10)	2107	2246.5	2283.5	2392	**2257.25**
Female feedback (n=10)	1978.5	2041	2103	2267	**2097.375**
Male feedback (n=10)	2188	2318	2283	2468.5	**2314.375**
Mixed feedback (n=10)	2052	2188.5	2286	2227	**2188.375**
	2081.375	**2198.5**	**2238.875**	**2338.875**	**2214.3438**

Note: Higher scores indicate better performance

A 2 way ANOVA with repeated measures, was performed to examine the impact of Condition and Round upon the overall performance of each dyad. There was a significant main effect for Condition, $F(336) = 3.687$, $p<.05$. Scores on this measure ranged from 2097.375 to 2314.375 ($M= 2214.344$, $SD= 80.94$)

A one way ANOVA was performed to determine which characteristic of the four conditions (presence or absence of feedback, same or mixed gender pairing, all male or all female pairing), was responsible for this effect. A significant main effect was found for same gender pairing. Overall performance was greatest in the male/male condition ($M= 2314.375$, $SD= 141.5388$), $F(1,18) = 8.443$, $p<.05$.

There was also a significant main effect for the Round factor, such that overall performance was greatest in round 4 ($M= 2338.625$, $SD= 192.5303$.), then round 3 ($M= 2238.875$, $SD= 221.0856$), then round 2 ($M= 2198.5$, $SD= 226.4758$) and then round 1 ($M= 2081.357$, $SD= 249.6638$, $F(3, 108) = 15.7684$, $p<.05$.

Orthogonal polynomial contrasts indicated the presence of a significant linear effect, such that outcome improved over rounds, $F(1,158) = 24.19$, $p<.01$. Outcome performance increased from Round 1 to Round 2 to Round 3 and then Round 4.

LOGROLLING

Performance

Measuring logrolling performance, allows the estimation of the extent to which negotiators make trade offs between issues that differ in importance to each party.

TABLE 7: Logroll Performance

	TASK				
CONDITION	1	2	3	4	
Mixed no feedback (n=10)	928	1136.5	1098.5	1222	**1096.25**
Female feedback (n=10)	816	886	895.5	1089	**921.625**
Male feedback (n=10)	1018	1157	1166	1262.5	**1150.875**
Mixed feedback (n=10)	942	1023.5	1110	1082	**1039.375**
	926	**1050.75**	**1067.5**	**1163.875**	**1052.031**

Note: Higher scores indicate more integrative settlements.

A 2 way repeated measures ANOVA was performed to examine the impact of Condition and Round on subjects performance on logrolling issues. There was a significant main effect for Condition $F(3,36) = 4.492$, $p<.05$. Scores on this measure ranged from 921.625 to 1150.875 (M= 1052.031 , SD= 84.987)

Logrolling performance was greatest in the male/male condition (M= 4603.5, SD= 561.635), and then the all female condition (M= 3686.5, SD= 639.01), $F(1,18) = 11.618$, $p<.05$.

There was a significant main effect across the four rounds of negotiation, $F(3,108) = 16.799$, $p<.05$. Scores on this measure ranged from 816-1262.5, (M= 1677.03, SD= 223.21 . Logrolling performance was greatest in the later tasks. The results were: task 1 (M= 926, SD= 225.875), task 2 (M= 1050.75, SD= 220.717), task 3 (M= 1067.5, SD= 212.952), task 4 (M= 1163.875, SD= 177.722),

An orthogonal polynomial trend analysis, using logroll scores as the repeated measure variable, was conducted. The results indicate a significant linear effect,

suggesting that logrolling improved over rounds, F (1,158) = 24.19, p<.01. Logrolling performance improved as subjects completed more tasks.

Judgment Accuracy

This measure of judgment accuracy measures negotiator's estimations of the relative importance of the two logroll issues to their opponent.

TABLE 8: Judgment Accuracy for Logrolling Issues

			TASK		
CONDITION	1	2	3	4	
Mixed no feedback (n=10)	3190	3038	3120	2410	**2939.5**
Female feedback (n=10)	3475	2765	2125	2303	**2667**
Male feedback (n=10)	3575	2700	1775	1940	**2497.5**
Mixed feedback (n=10)	3810	2415	2490	2160	**2718.75**
	3512.5	**2729.5**	**2377.5**	**2203.25**	**2705.688**

Note: Lower scores indicate greater judgment accuracy

A 2 way repeated measures ANOVA was performed to examine the impact of Condition and Round on subject's judgment accuracy on logrolling issues.

Condition failed to have a significant effect upon judgment accuracy F(3,36) = .187, p>05. There was however, a significant main effect for Round, F (3,156) = 5.607, p<.01. Scores on this measure ranged from 1940-3810 (M= 2705.69 , SD= 589.24). Judgment accuracy on the logrolling issues was greatest in the later tasks, task 1 (M= 3512.5, SD= 1577.963), task 2 (M= 2729.5, SD= 1524.43), task 3 (M= 2377.5, SD= 1562.048), task 4 (M= 2203.25, SD= 1539.193)

Orthogonal polynomial contrasts indicated a significant linear effect, such that judgment accuracy on logrolling issues increased over rounds, $F(1,158) = 15.266$, $p<.01$. Judgment accuracy on the logrolling issues increased from Round 1 to Round 2 to Round 3 and then Round 4. This indicates that judgment accuracy improves as negotiators complete more tasks.

Relationship Between Judgment Accuracy and Performance

In general the results for judgment accuracy and performance on logrolling parallel one another. This is suggestive of the existence of a relationship between judgment accuracy and overall performance. To examine this issue, a correlation coefficient was computed between measures of judgment accuracy and overall performance. This showed that judgment accuracy and overall performance were significantly correlated ($r(40) = -.54$, $p<.001$. The more negotiators understood their opponent's interests the better they performed. Remember that judgment accuracy is higher with lower scores and this accounts for the negative correlation coefficient. However, although, a correlation does exist, it is not high and as such does not account for much variance.

COMPATIBLE ISSUES

Performance

This measure of performance examined the extent to which negotiators were able to reach agreement on issues in which their preferences were identical to their opponents. Across all negotiations 77.5% of the negotiators reached the optimal outcome for the compatible issue, while 22.5% of the negotiator pairs settled for suboptimal outcomes. A total of 18 pairs (45%) of negotiators reached the optimal outcome for each round, while the remaining 22 pairs (55%) failed to chose the best alternative in at least one of the four rounds.

TABLE 9: Compatible Issue Performance

	TASK				
CONDITION	1	2	3	4	
Mixed no feedback (n=10)	570	510	585	570	**558.75**
Female feedback (n=10)	562.5	550.5	570	573	**564**
Male feedback (n=10)	570	555	505	606	**559**
Mixed feedback (n=10)	510	565	570	555	**550**
	553.12	**545.12**	**557.5**	**576**	**557.94**

A 2 way ANOVA with repeated measures was performed to examine the impact of Condition and Round on subject performance on compatible issues. The main effects for Condition and Round were both nonsignificant for this measure $p>.05$. Neither were any interactions significant.

Judgment Accuracy

Compatible issue accuracy measures the negotiator's perceptions of the relative importance of issues to the other party. Judgment accuracy on the compatible issue for each task was calculated for each dyad by summing the points earned by each negotiator on the compatible issue in each task. Perfect judgment accuracy was scored 1, totally inaccurate judgment scored 0, and if the negotiator was indifferent to the alternatives they were scored 0.5. Scores ranged from 0.75-1.55 ($M= 1.24$, $SD =0.21$).

TABLE 10: Judgment Accuracy for Compatible Issues

	TASK				
CONDITION	1	2	3	4	
Mixed no feedback (n=10)	1.2	1.45	1.3	1.2	**1.29**
Female feedback (n=10)	1.25	1.5	1.55	1.3	**1.4**
Male feedback (n=10)	1.28	.94	1.11	1.33	**1.17**
Mixed feedback (n=10)	.75	1.2	1.55	1.25	**1.19**
	1.12	**1.27**	**1.38**	**1.26**	**1.26**

Note: Higher scores indicate greater judgment accuracy

A 2 way ANOVA with repeated measures was performed to examine the impact of Condition and Round on subject performance on compatible issues. No significant main effects were present for this measure, $p>.05$. Contrasting with judgment accuracy results for logroll issues, compatible issue judgment accuracy was not affected by Round. Interestingly a significant interaction effect was found between condition and judgment accuracy for the compatible issue $F(9,105) = 2.21$, $p<.05$..

Relationship Between Judgment Accuracy and Performance

In general the results for judgment accuracy and performance on compatible issues parallel each another. This suggests the existence of a relationship between judgment accuracy and performance. To examine this issue, a correlation coefficient was computed between measures of judgment accuracy and overall performance. This showed that judgment accuracy and overall performance were significantly correlated ($r(39) = .37$, $p<.02$. The more negotiators understood their opponent's interests on the compatible issues, the better they performed.

PART FOUR

DISCUSSION

INTEGRATIVE AGREEMENTS

The purpose of the present research was to explore the impact of the gender constitution of dyads upon negotiator performance. The rationale for the present research, derived from behavioural decision theory postulates (Bazerman & Carroll, 1987), that the gender constitution of the dyad will affect the choices and judgments made by each negotiator about the negotiation situation. As predicted there was a significant difference between the overall performance of male and female dyads, with male dyads outperforming female dyads. The present findings support our rationale, providing evidence for the existence of a systematic relationship between gender and negotiation performance.

Given the general debate in the contemporary negotiation literature concerning the bargaining effectiveness of the respective genders, the current findings present an interesting pattern of results. Early individual differences research yielded an overwhelming assortment of contradictory and inconclusive findings. Rubin & Brown (1975) proposed a reconciliation of the then existing research, concluding that no systematic relationship existed between gender and negotiation performance. Findings of the present research contradict this conclusion.

The manner in which the individual approaches the negotiation context is critical to their subsequent behaviour. A negotiator's interpretation of the negotiation context is central to the actions they take. Each individual's cognitive disposition combines with their prior negotiation experience to allow negotiators to recognise the integrative potential inherent in any negotiation situation. Different genders bring many different interpretative assumptions to the negotiation context. Men may learn/discover the integrative potential in a situation, earlier than do women.

Research suggests that a negotiator's initial perceptions affect subsequent judgments made by the negotiator during the negotiations (Asch, 1946; Anderson,

1965; Hammond, Stewart, Brehmer & Steinman, 1975; Kelly & Stahelski, 1970). Empirical research provides further support for the assumption that all negotiators have expectations concerning the nature of the conflict, distribution of resources and interests of their opponents (Thompson & Hastie, 1990). It is possible the differential performance found between male and female dyads in the present experiment may be due to differences in the respective abilities of the genders to recognize the potential for joint gain.

Research by Pinkley (1990) & Druckman & Zechmeister (1973) conclude that men and women perceive negotiation contexts differently. Men it seems, approach negotiations with a view to obtaining an outcome with the greatest benefit, i.e. maximizing their own earnings. Women however, are more likely to adopt an interpersonal focus toward negotiations, and in anticipation of future interactions with their opponent would be likely to expect a negotiation characterized by compromise. An unpublished study by Neale & Northcraft (cited in Neale & Northcraft, 1991) found correlations between scores on a "Propensity to Negotiate" scale, and gender. They concluded that males were more likely to view a potential exchange as an opportunity to negotiate than were females.

This research merely identifies the existence of a gender based differences in the overall performance of negotiators, and provides one possible explanation for the present findings. The role of pre-negotiation expectations and the capacity of the respective genders to identify integrative potential in negotiations, is worthy of further empirical research. In addition, it must be acknowledged that the effects stemming from cognitive biases (Bazerman, 1983) may possibly be involved in the gender results. Future research on gender differences in overall negotiation performance is necessary in order to determine exactly what mechanisms are responsible these differences.

The discovery of a significant linear effect, such that both overall performance and logroll performance improved over rounds, is evidence of the existence of a learning effect. The more tasks the negotiators completed, the more successful they were. This supports both the common sense assumption that a relationship exists between performance and experience, and earlier research by Thompson. Thompson (1990b), concluded that experienced bargainers gain a larger share of the joint resources, when compared to lesser experienced negotiators. It is important to note however that it is not practise with negotiation tasks that is responsible for increases in performance. But rather, success in the identification of logroll issues, and exposure to tasks with integrative potential that constitute the key ingredients for increases in negotiation performance (Thompson, 1990a).

FIXED-PIE JUDGMENT ACCURACY

Fixed-pie judgment, i.e. the assumption by the negotiator that their opponent's interests are completely opposed to their own, represents a serious judgment error (Thompson & Hastie, 1990; Thompson, 1991; Bazerman & Carroll, 1987; Neale & Northcraft (cited in Thompson, 1991); Thompson, 1990a. It appears that this bias is equally pervasive in both genders, specifically in same gender dyads. These findings lend further support to earlier research attesting to the prevalence and tenacity of the fixed-pie bias in negotiator behaviour (Thompson et al 1992). The results of the present research suggest that gender does not affect the prevalence of the fixed-pie error.

However it should be noted that in the present experiment we were particularly interested in the effect of the gender constitution of the dyad upon the negotiator's ability to identify compatible issues, and its subsequent implications for prevalence of the fixed-pie myth. It is of interest to note that although the gender pairing of the dyads affects the joint outcome achieved, that judgment accuracy of the negotiators

was not affected. Judgment accuracy on both dependent measures, logroll and compatible interests failed to be significantly affected by the gender pairing of the dyads. This suggests that both male and female dyads are equally susceptible to the fixed pie bias.

These findings are a strong indication that the performance differential between male and female dyads, was not due to the prevalence of the fixed pie myth. It is possible that the prevalence of other cognitive biases maybe responsible for the differential performance of the dyads. Bazerman (1983) identified five unique systematic biases that create cognitive limitations affecting negotiator success: (1) the impact of negotiator's frame, (2) the mythical fixed-pie, (3) the non-rational escalation of conflict, (4) negotiator overconfidence, and (5) the winner's curse. Although we have found that the fixed-pie bias is not responsible for the performance differential between the dyads, it is possible that one of the other biases may be.

From the present results it is not possible to speculate which of them may be responsible for the performance differential between the genders. However it is important to point out that the mentioned biases may well be a subset of the many biases that affect negotiator judgment. Bazerman (1983) notes, there are many possible biases that affect negotiator judgment that have not been formally identified, let alone measured. These include e.g. negotiators perceiving themselves as cleverer, superior and more intelligent than their opponents. It is possible that one of the these lesser mentioned possible biases may be responsible for the differential performance of the dyads. Further research is necessary in order to replicate the findings of the present research and to identify the judgmental heuristics responsible. This constitutes an area worthy of future empirical investigation.

COGNITIVE FEEDBACK

Contrary to expectations, the judgment accuracy of the subjects was not affected by the provision of cognitive feedback. Such findings are inconsistent, surprisingly, with earlier research by Thompson et al (1992), who concluded that the provision of cognitive feedback increased the likelihood of the achievement of integrative agreements. The provision of feedback was intended to prompt negotiators to learn about the underlying structure of the task, as thus facilitating increases in performance. From casual observation it appears that subjects failed to abstract information about the underlying structure of the task from the feedback, and as a direct consequence failed to improve their performance.

Feedback, as manipulated in this study differed qualitatively from that which often operates in extra-laboratory settings. In real world negotiations, both before, during and after negotiations, the negotiating parties are surrounded by feedback from a variety of different sources. For example, negotiators may be aware of the reputation of their opponent, and their opponent's interests from prior negotiations, before beginning the exchange. During the negotiations, through consideration of the patterns of offer and acceptance, negotiators are provided with feedback concerning their opponent's interests. At the completion of the negotiation, negotiator's receive feedback on their performance by determining if they have achieved their goals, and their own subjective response to the negotiation outcome. Although the negotiator may be exposed to many of these forms of feedback during negotiations, if they are not identified, processed and evaluated by the negotiators they will have little or no effect upon facilitating increased performance in subsequent negotiations.

Findings from the present study suggest that future research on cognitive feedback must include a means of ensuring that subjects actively process and evaluate the feedback with which they are provided, if a similar experimental paradigm is to be

followed. This is supported by the second feedback mechanism* of the judgment-action-outcome model, which proposes that individuals must evaluate and interpret feedback before it will be effective. The key implication is that mere presentation of feedback does not ensure its utilization. Presentation of cognitive feedback in both experimental and applied settings, must therefore be coupled with a mechanism to ensure that it is acknowledged and interpreted by the negotiator, if the feedback is to effectively complete its self-correcting function.

LIMITATIONS OF THE PRESENT STUDY

One important issue concerns the generalizability of the present findings to real world contexts. Although the present study was conducted in a laboratory setting, the negotiation tasks used were based on real world negotiation tasks, and contained many of the elements present in actual negotiations (Schlenker & Bonoma, 1978). However, in the real world, the negotiation context is often complex and uncertain. The existence of positive zones of agreement may or may not be obvious to the negotiator. Research notes that tasks with integrative potential, are common in real world negotiations (Lewicki & Litterer, 1985; Raiffa, 1982; Pruitt & Carnevale, 1982). It is important to note that although the present research focuses upon variable sum tasks, it does not assume that all tasks have integrative potential.

The present research examined behaviour in a laboratory setting, employing a paradigm based on that by Thompson et al (1992). While the negotiation tasks involved conflict situations individuals may encounter in real life, they maybe criticised as lacking the inherent complexity of real world negotiations. The negotiation environment in the present experiment was simple, with well defined priorities and limitations. In real world negotiations, the priorities and interests of the negotiating parties are often not as clearly defined, nor as easily controlled. This

points to the need to examine the dynamics of the negotiation process in more complex and realistic settings (Carroll, Bazerman & Maury, 1988). This may require using research paradigms that are richer, in both the form and the content of the material they present to subjects.

To date the majority of research on integrative bargaining has been conducted upon student samples. As a consequence, such findings have considerable limitations when generalized to applied settings with experienced negotiators. One rather interesting difference comes from the work of Neale & Northcraft (1986) who suggested that amateurs are able to identify integrative potential in a situation faster than experts. Given such differences the present findings may be restricted in their capacity to be generalizable to negotiators characteristic of applied settings. This represents a limitation of the current study, due to the differential approaches adopted by students and experts towards negotiations.

In an applied setting, negotiations frequently involve participants with a diversity of backgrounds, experiences and characteristics. Failure to observe evidence of individual differences in negotiation behaviour may be attributed to the narrow range of individual differences within experimental populations (Hamner, 1980). Researchers tend to use homogenous populations in these studies, ie subjects of the same gender, age, race, socio-economic status. The effects of a specific personality predisposition may fail to be present due to the similarity between individuals in experimental populations. Existing research is criticised for examining differences between individuals which are not appreciably or meaningfully different from each other, rather than assessing groups with distinct individual differences.

As previously mentioned, the feedback manipulation in the present experiment was unsuccessful due to the subjects' failure to process the information presented to them. It would appear that subjects in the present experiment misinterpreted or

indeed failed to interpret the feedback with which they were provided. Subjects appeared to see the presentation of feedback as an opportunity to assess their judgment accuracy, i.e they compared their guess at their opponent's schedule with their opponents actual schedule. Or alternatively, many overtly totalled up how many points their opponent's earned, and using the feedback schedule compared it with what they themselves had earned. They used this as an approximation, to determine which party had won that round of negotiations. In short, negotiators appeared not to utilise the feedback as intended, i.e. to learn about the underlying structure of the task, but rather used it as a means of calculating their outcome in terms of success or failure.

Future research should include a measure to ensure that the feedback provided is interpreted and evaluated by the subjects. One possible approach was used by Thompson et al (1992). Thompson et al required their subjects to complete an open-ended response following the presentation of feedback. Open-ended responses allowed Thompson et al to explore the assumptions made by negotiators about the interests and priorities of their opponents. Thompson's subjects were required to study the feedback information and record their response to it. These responses were independently coded by experimenters, and points awarded for accurate inferences made by negotiators about the other party's interests. It is recommended that future research exploring the effects of feedback upon negotiator performance include a similar open-ended response measure.

FUTURE RESEARCH

The development of a theory of negotiator cognition must expand upon existing research, by demonstrating not only the existence of judgment heuristics, but also the factors which mediate their effects. Each negotiator brings to the negotiation context 'person variables', which are the product of prior experience, learning,

biological limitations and memory. This requires a re-focusing of contemporary research more closely upon the cognitive process of the negotiator, by providing answers as to why negotiators deviate from rational decision making process, in terms of individual differences and their impact upon elements of decision making. The mechanics of judgment and choice have been widely defined in terms of task and context variables, and little attention has been paid to the contribution made to the negotiation setting by the negotiator.

For example, one explanation for the current inconsistencies in individual differences research, centers on pre-negotiation behaviour. Individual differences may act as a sieve, separating those with specific traits, characteristics or predispositions to engage in negotiations, from those without such characteristics. Therefore existing attempts to examine individual differences in negotiation behaviour would be a fruitless exercise, as a consequence of prior self-selection. This is an area worthy of further empirical attention, in effort to further collective understanding of the dynamics of negotiation.

It is important in the development of methodologies for future research to devise research methods that make explicit rather than infer, aspects of decision making processes. All too often judgment biases and negotiator cognitions are inferred on the basis of negotiation outcomes, rather than from direct observation (Thompson, 1990a). The objective of behavioural decision theory is to develop a blue print of the negotiator's mind, in order to accurately predict their behaviour. In order to do this it is necessary to move away from comparing negotiator behaviour with predictions made by early normative models. Research by Carroll et al (1988) on decision-making process in confrontational situations and Thompson & Hastie's (1990) work on judgment error, were the first to utilize a "think aloud" measure as a

means of directly examining negotiator perceptions. Such measures present potentially a more complete set of methodological tools for allowing closer examination of the cognitive processes of negotiators.

Increased attention to the scientific study of negotiation has been directed firstly, at improving negotiator judgment by delineating ways in which negotiators deviate from rationality, and second by attempting to provide a means of eliminating these sub-optimal heuristics from the negotiator's cognitive repertoire. We believe that an additional approach to the improvement of negotiator behaviour lies in the identification of individual differences among negotiators which may effect their subsequent decision making processes. Future research must move beyond the demonstration of the existence of inconsistencies, towards examination of the factors which may mediate these variables which maybe associated with sub-optimal decisions, i.e. if the longer term aim is to eliminate them from negotiator behaviour. Negotiation researchers need to keep in mind the implicit objective, i.e. to find ways to improve resolution behaviours.

CONCLUSIONS

It is clear that until further research is done on the effects of gender constitution of the dyad that no firm conclusions maybe drawn. The present research suggests that the gender constitution of the dyad affects negotiation performance, specifically when negotiators are paired with an opponent of the same gender. Although current findings are suggestive of a relationship between gender and performance, they merely point to its existence and do not present any firm explanations for the mechanisms behind the phenomenon.

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APPENDICES

APPENDIX 1

TASK 2

RENTAL (l)	DEPOSIT (l)	UTILITIES (c)	LENGHT (d)	DATE (d)
$55 (**0**)	$150 (**0**)	$20 (**0**)	3 Yrs (**0**)	May 5 (**0**)
$60 (**165**)	$140 (**25**)	$40 (**75**)	2.5 Yrs (**90**)	May 10 (**60**)
$65 (**330**)	$130 (**50**)	$60 (**150**)	2 Yrs (**180**)	May 13 (**120**)
$70 (**495**)	$120 (**75**)	$80 (**225**)	1.5 Yrs (**270**)	May 15 (**180**)
$75 (660)	$110 (**100**)	$100 (**300**)	1 Yr (360)	May 27 (240)

RENTAL (l)	DEPOSIT (l)	UTILITIES (c)	LENGHT (d)	DATE (d)
$55 (**100**)	$150 (**660**)	$20 (**0**)	3 Yrs (**360**)	May 5 (**240**)
$60 (**75**)	$140 (**495**)	$40 (**75**)	2.5 Yrs (**270**)	May 10 (**180**)
$65 (**50**)	$130 (**330**)	$60 (**150**)	2 Yrs (**180**)	May 13 (**120**)
$70 (**25**)	$120 (**165**)	$80 (**225**)	1.5 Yrs (**90**)	May 15 (**60**)
$75 (**0**)	$110 (**0**)	$100 (**300**)	1 Yr (**0**)	May 27 (**0**)

APPENDIX 2

TASK 3

PRICE (c)	WARRANTY	DATE (l)	COLOR (d)	RADIO (l)
$12 (**0**)	6 Months (**0**)	5 Weeks (**0**)	Black (**0**)	None (**0**)
$11.5 (**75**)	12 Months (**60**)	4 Weeks (**165**)	Red (**90**)	AM (**25**)
$11 (**150**)	18 Months (**120**)	3 Weeks (**330**)	Blue (**180**)	AM/FM (**50**)
$10.5 (**225**)	24 Months (**180**)	2 Weeks (**495**)	Green (**270**)	TAPE (**75**)
$10 (**300**)	30 Months (**240**)	1 Week (**660**)	Yellow (**360**)	C.D (**100**)

PRICE (c)	WARRANTY	DATE (l)	COLOR (d)	RADIO (l)
$12 (**0**)	6 Months (**240**)	5 Weeks (**100**)	Black (**360**)	None (**660**)
$11.5 (**75**)	12 Months (**180**)	4 Weeks (**75**)	Red (**270**)	AM (**495**)
$11 (**150**)	18 Months (**120**)	3 Weeks (**50**)	Blue (**180**)	AM/FM (**330**)
$10.5 (**225**)	24 Months (**60**)	2 Weeks (**25**)	Green (**90**)	TAPE (**165**)
$10 (**300**)	30 Months (**0**)	1 Week (**0**)	Yellow (**0**)	C.D (**0**)

APPENDIX 3

TASK 4

DESTINATION	LENGHT (c)	COST (d)	TRANSPORT	LEAVING (l)
Auckland (**240**)	5 Weeks (**300**)	$3000 (**360**)	Fly (**660**)	May 5 (**100**)
Well-ton (**180**)	4 Weeks (**225**)	$2400 (**270**)	Drive (**495**)	May 10 (**75**)
C-church (**120**)	3 Weeks (**150**)	$1800 (**180**)	Bus (**330**)	May 13 (**50**)
Dunedin (**60**)	2 Weeks (**75**)	$1200 (**90**)	Train (**165**)	May 15 (**25**)
Invercargill (**0**)	1 Week (**0**)	$600 (**0**)	Hitch (**0**)	May 27 (**0**)

DESTINATION	LENGHT (c)	COST (d)	TRANSPORT	LEAVING (l)
Auckland (**0**)	5 Weeks (**300**)	$3000 (**0**)	Fly (**0**)	May 5 (**0**)
Wellington (**60**)	4 Weeks (**225**)	$2400 (**90**)	Drive (**25**)	May 10 (**165**)
C-church (**120**)	3 Weeks (**150**)	$1800 (**180**)	Bus (**50**)	May 13 (**330**)
Dunedin (**180**)	2 Weeks (**75**)	$1200 (**270**)	Train (**75**)	May 15 (**495**)
Inv-cargill (**240**)	1 Week (**0**)	$600 (**360**)	Hitch (**100**)	May 27 (**660**)

APPENDIX 4

PAYOFF MATRICES QUIZ

1. As a negotiator, which **issue** gives you the most points in this task? Please circle your choice.

   SALARY
   VACATION
   YR INC
   START
   MEDICAL

2. As a negotiator, which **issue** gives you the least points in this task? Please circle your choice.

   SALARY
   VACATION
   YR INC
   START
   MEDICAL

3. Which solution would give you the most points in this task?

   SALARY $_____
   VACATION _____weeks
   YR INC _____%
   START DATE _____
   MEDICAL _____%

APPENDIX 5

CONSENT FORM

Reason for the project: To explore the dynamics of bilateral negotiations and the factors which effect the achievement of integrative agreements.

Your task in this project: You will be required to complete several tasks which involve negotiating with an opponent to reach an agreement. In return for you participation, you will receive a ticket in a $100 lottery, your chances of winning are proportional to the number of points earned in the experiment.

Risks associated with this project: Nil

Confidentiality: It will not be necessary to identify you during the experiment. Your confidentiality will be assured at all times. All data collected will be group data.

Voluntary participation: You are aware that participation in this experiment is purely voluntary. You may terminate your participation at any stage during the experiment.

Time required: 1 hour of your time will be required in order to complete the experiment.

Name of researcher/supervisor: Justine Reese/Bruce Jamieson.

I agree to participate in the project described above, on the understanding that if at any time I wish to withdraw from the experiment I may, without prejudice , do so. All information collected will be confidential as will the identity of the participants.

Name:

Signature

Date: